

JJZ-FF

Overhead Line Fault Indicator

For MV Power Distribution Network

Datasheet

Version 1.0



1. Description

The JJZ-FF-C overhead fault indicator is used in 5~38KV overhead line networks, enable the electricity distribution network engineers to quickly identify the faulty section of network and restore power supplies to customers on healthy sections in the shortest time possible.

A high accuracy current sensor in the JJZ-FF-C, monitors the phase current flowing. When detecting current level exceeds a user-selectable threshold (as a result of a phase-to-phase or phase-to-ground fault), the fault is indicated at the same time by both mechanical Flag Indicator, and flashing, high-power LED indicator.

The fault is located between the last indicator that has been triggered and the first indicator which is still inactive. The path of the fault current from the feeding point to the fault location is marked by the triggered indicators. The unit resets automatically when power to the line is restored, or after a user-selectable timer period.

The indicator can be mounted under live conditions with the help of an adapter and a hot stick. The indicator could be self-sustained by the monitored network from a current flow of 10A upwards. The indicator also with built-in lithium battery that could powered the indicator for more than 10 years.

2. Product Features

- LED indication with 360 degrees of visibility
- Dual indication (High-Visibility Flag & High-Power LEDs)
- Mounting can be performed while equipment is energized
- Hot-stick Line-mountable
- User-selectable fault trip level
- User-selectable fault response time
- User-selectable reset time after power return

3. Operation worked example

3.1 Local indication

On detection of fault current above the fault sensitivity threshold and for the minimum required duration the JJZ-FF-C indicator will respond both by mechanical Flag Indicate, and flashing, high-power LED indicate.



Indicator in ready status



Indicator in flag & flashing status

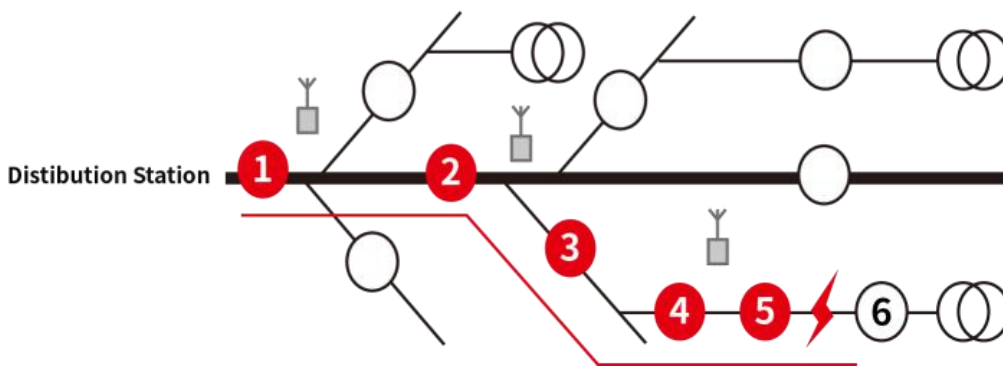
3.2 Indication period & reset

The indication period is user-selectable but should be preset before manufactured. The default value is 12 hours flag&flashing when a fault is detected.

If the fault section restore power sooner than the default value (let's say, 12 hours), then the indicator will return to the ready state (flag return from red to white, LED not flash) ; If the fault section still not be able to restore power after the default value (12 hours), then the indicator still will return to the ready state.

3.3 Identify the fault section

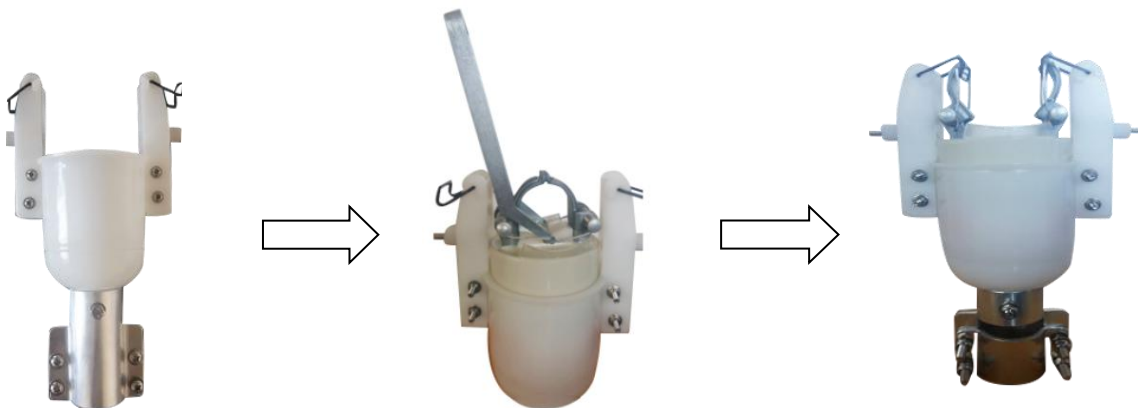
The fault is located between the last indicator that has been triggered and the first indicator which is still inactive. The path of the fault current from the feeding point to the fault location is marked by the triggered indicators.



Note: The diagram above indicate that the fault section is between the point 5 and point 6.

4. Installation

The indicator can be mounted under live conditions with the help of an adaptor and a hot stick. Four-faith offer the adaptor like below. Hot stick not offer since it is universal.



Note: Put the indicator into the adaptor and fix the the spring of the indicator with the hook of the adaptor.

5. Specification

5.1 General

Applicable voltage range	5~38KV
Applicable current range	0~600A
Applicable power frequency range	45~60Hz
Angle of visibility	360° flashing insight
Fault flashing interval	5s
Duration of flashing	50ms
Sensitivity	0A~100A: ±3A
	100A~600A: ±3%
Static power consumption	less than 20uA
Auto reset time	1~48h user-selectable
Identification of fault current duration	20ms~40ms
MTBF	more than 70000h
Impulse current withstand	31.5kA for 2s
Protection level	IP67
Weight	less than 500g
Outline dimension	Φ75mm * 115mm

5.2 EMC

Electrostatic discharge	Can withstand the GB/T 17626.2 of the IV level of electrostatic discharge interference test Contact discharge: + 8KV Air discharge: + 15KV
EFT/B immunity test	Can withstand the GB/T 17626.12 of the IV class fast pulse group interference test Voltage peak value: 2KV Frequency: 5KHz & 100KHz
Radiated susceptibility	Can withstand the GB/T 17626.3 of the IV level RF electromagnetic field immunity Field strength: 30V/m
Surge immunity	Can withstand the GB/T 17626.5 of the IV level surge (impact) interference test Common mode voltage: 4KV ± 10% Differential mode voltage: 2KV ± 10%
Power frequency magnetic field immunity	Can withstand the GB/T 17626.8 of the V level power frequency magnetic field immunity interference test Magnetic field intensity: 100A/m
Damped oscillatory magnetic field immunity	Can withstand the GB/T 17626.10 of the V level damping oscillation magnetic field immunity test Damped oscillatory magnetic field intensity peak value: 100A/m

5.3 Environmental

Environment temperature	Operation temperature : -35°C~80°C(-31~+176°F) Storage temperature : -40°C~85°C(-40~+185°F)
Relative humidity	5~95%(No condensing)
Altitude	≤4000m